

IT Project Proposal Report - Detail
Agency: 047 - EDUCATIONAL TELECOMMUNICATIONS COMM
Budget Cycle: 2017-2019 Biennium **Version: AF - AGENCY FINAL REQUEST**

IT Project : Radio Transmission Replacement

General Section

| | | |
|-------------------------------------|--------------------------------------|----------------------------|
| Contact Name : Ling Ling Sun | E-mail : lsun@NETnebraska.org | Agency Priority : 2 |
| Address : 1800 North 33rd St | Telephone : 402-472-9333 | NITC Priority : |
| City : Lincoln | | NITC Score : |
| State : Nebraska | Zip : 68503 | |

Expenditures

| IT Project Costs | Total | Prior Exp | FY16 Appr/Reappr | FY18 Request | FY19 Request | Future Add |
|--------------------------------------|----------|-----------|------------------|--------------|--------------|------------|
| Contractual Services | | | | | | |
| Design | 0 | 0 | 0 | 0 | 0 | 0 |
| Programming | 0 | 0 | 0 | 0 | 0 | 0 |
| Project Management | 0 | 0 | 0 | 0 | 0 | 0 |
| Data Conversion | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal Contractual Services | 0 | 0 | 0 | 0 | 0 | 0 |
| Telecommunications | | | | | | |
| Data | 0 | 0 | 0 | 0 | 0 | 0 |
| Video | 0 | 0 | 0 | 0 | 0 | 0 |
| Voice | 0 | 0 | 0 | 0 | 0 | 0 |
| Wireless | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal Telecommunications | 0 | 0 | 0 | 0 | 0 | 0 |
| Training | | | | | | |
| Technical Staff | 0 | 0 | 0 | 0 | 0 | 0 |
| End-user Staff | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal Training | 0 | 0 | 0 | 0 | 0 | 0 |

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Expenditures

| IT Project Costs | Total | Prior Exp | FY16 Appr/Reappr | FY18 Request | FY19 Request | Future Add |
|---------------------------------------|----------------|------------------|-------------------------|---------------------|---------------------|-------------------|
| Other Operating Costs | | | | | | |
| Personnel Cost | 0 | 0 | 0 | 0 | 0 | 0 |
| Supplies & Materials | 0 | 0 | 0 | 0 | 0 | 0 |
| Travel | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal Other Operating Costs | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital Expenditures | | | | | | |
| Hardware | 668,000 | 0 | 0 | 334,000 | 334,000 | 0 |
| Software | 0 | 0 | 0 | 0 | 0 | 0 |
| Network | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 32,000 | 0 | 0 | 16,000 | 16,000 | 0 |
| Subtotal Capital Expenditures | 700,000 | 0 | 0 | 350,000 | 350,000 | 0 |
| TOTAL PROJECT COST | 700,000 | 0 | 0 | 350,000 | 350,000 | 0 |

Funding

| Fund Type | Total | Prior Exp | FY16 Appr/Reappr | FY18 Request | FY19 Request | Future Add |
|----------------------|----------------|------------------|-------------------------|---------------------|---------------------|-------------------|
| General Fund | 700,000 | 0 | 0 | 350,000 | 350,000 | 0 |
| Cash Fund | 0 | 0 | 0 | 0 | 0 | 0 |
| Federal Fund | 0 | 0 | 0 | 0 | 0 | 0 |
| Revolving Fund | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Fund | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL FUNDING | 700,000 | 0 | 0 | 350,000 | 350,000 | 0 |
| VARIANCE | 0 | 0 | 0 | 0 | 0 | 0 |

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IT Project: Radio Transmission Replacement

EXECUTIVE SUMMARY:

NET is requesting an appropriation to replace aging FM antenna and feed line at FM sites KUCV (Lincoln), KTNE (Alliance), KRNE (Merriman), and KXNE (Norfolk). The antennas and feed lines at KTNE and KXNE are 26 years old, KRNE's is 16 years old and KUCV's is 15 years old. Replacing this equipment and older components would be done to reduce rising maintenance costs and to eliminate downtime. Also, the NET FM system is the State of Nebraska's primary relay system for the Emergency Alert System. This is the final phase of updating the statewide NET Radio Network. Delaying the completion of this final phase any further would just continue to increase off-air, downtime at these sites and increase annual operating expenses for repairs, maintenance and supplies.

The project would begin the summer of 2017 and proceed through the fall (weather and tower crews permitting) at KUCV and KTNE. Work on the KRNE and KXNE sites would begin summer of 2018 and run thru the fall of 2018. Delaying the work heightens the risk that tower crews will be difficult to schedule and may be more expensive due to anticipated demand related to spectrum repacking adjustments on television towers and a nationwide shortage of tower crews.

Attachments:

NITC Radio Transmission Replacement Project.doc

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

The goal is to replace 26 year old antennas and feed lines at KTNE-Alliance, KXNE-Norfolk, replace unreliable antennas and feed lines at KUCV-Lincoln, and KRNE- Merriman. The NET Radio listeners, Nebraska commercial broadcasters and Nebraska residents relying on "over the air" Emergency Alerts will benefit from this project. The replacement of the FM antennas and feed lines will increase reliability and reduce operating costs. The measurement and assessment methods will be monitoring and feedback from NET Radio listeners, Nebraska commercial broadcasters that use NET Radio as their primary EAS monitoring station. The project should positively impact the NET operating budget which by reducing annual maintenance costs.

This project is being done to maximize the reliability and uptime of the radio system NET has the obligation of managing on behalf of the State of Nebraska.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

NET has a statutory requirement to provide broadcast services as well as distribute emergency notifications across the state of Nebraska. Purchasing and installing new hardware will greatly increase reliability, efficiency and reduce maintenance cost. NET intends to start these projects as soon as possible before tower crews will be difficult to schedule and may be more expensive due to anticipated demand related to spectrum repacking adjustments on television towers and a nationwide shortage of tower crews.

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The nature of this project allows few solutions other than replacement of hardware. By doing nothing the broadcast areas will have interruptions in service performance for NET Radio and the State Primary and State Relay of the Nebraska (EAS).

This Project is in compliance with the Nebraska Emergency Management Agency's (NEMA) Nebraska EAS Plan, Section 3 stating "The Nebraska EAS State Primary station is KUCV 91.1 FM Lincoln. The NE SP/SR Network is comprised of all Nebraska Educational Telecommunications (NET) radio transmitters, plus KVNO radio in Omaha."

TECHNICAL IMPACT (20 PTS):

The project will replace 26 year technology hardware with new efficient and reliable ones. NET has completed a multi-year project replacing all of the main FM Transmitters, and have documented a substantial reduction in maintenance costs while increasing reliability. The replacement of the FM Antennas and Feed Lines will complete the upgrade to the statewide system, maintain current coverage, reduce repairing cost and increase reliability.

The replacement will use the most recent industry standard technology and hardware. It should take these systems beyond the next decade.

The replacement equipment is considered Industry Replacement Standard for this type of system.

These systems are completely compatible with existing power and physical construction of NET's towers and buildings. Any significant upgrades to federally regulated towers will cause the structures to no longer be "grandfathered" under previous tower safety standards. The towers will have to be upgraded to the most current federal tower safety guidelines.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

NET is planning to purchase, install FM antennas and feed lines. NET is the project sponsor. NET Radio listeners, Nebraska commercial broadcasters that use NET Radio as their Primary EAS monitoring station are the stakeholders.

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NET will enter into contract with a qualified insured tower maintenance contractor to install the FM Antennas and Feed Lines.

NET will act as the project manager for this project.

The major deliverable for this project is the removal of the old system and replacement of the new system. The time frame for this work is eight (8) days per FM Antenna and Feed Line from receipt of system and getting the tower crew on site. Funds will be requested for KUCV and KTNE being completed in FY2018 and KXNE and KRNE to be completed in 2019.

No additional training or staff development is required. Operations will be seamless to present day workflow.

No additional support is required, other than routine operational maintenance.

RISK ASSESSMENT (10 PTS):

The FM antenna and Feed Lines need to be replaced soon or NET Radio Listeners, Nebraska Commercial Broadcasters and Nebraska residence relaying on "over the air" Emergency Alerts will experience additional downtime and diminished reception. We are expecting a major industry impact caused by the FCC mandated repack, and the availability of qualified manufacturers and installers will be potentially effected for new projects during the next 3-5 years.

This purchase will be made under the State Purchasing Guidelines to minimize risk. Any assistance with contractual parties will have bonded and insurance requirements to assure protection to the State of Nebraska.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

Total Cost is estimated at \$700,000. \$350,000 in FY2018 and \$350,000 in FY2019. See details in Financial Tab above. Also under Capital Construction Projects of this Budget System.

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Nebraska Information Technology Commission

Project Proposal Form

Funding Requests for Information Technology Projects

2017-2019 Biennial Budget

IMPORTANT NOTE: Project proposals should only be submitted by entering the information into the Nebraska Budget Request and Reporting System (NBRRS). The information requested in this Microsoft Word version of the form should be entered in the NBRRS in the "IT Project Proposal" section. The tabs in the "IT Project Proposal" section coincide with sections contained in this Microsoft Word version of the form. Information may be cut-and-pasted from this form or directly entered into the NBRRS. **ALSO NOTE** that for each IT Project Proposal created in the NBRRS, the submitting agency must prepare an "IT Issue" in the NBRRS to request funding for the project.

| | |
|----------------------|--|
| Project Title | Radio Transmission Replacement Project |
| Agency/Entity | NETC (Nebraska Educational Telecommunications Commission) |

**Project Proposal Form
2017-2019 Biennial Budget**

Notes about this form:

1. **USE.** The Nebraska Information Technology Commission (“NITC”) is required by statute to “make recommendations on technology investments to the Governor and the Legislature, including a prioritized list of projects, reviewed by the technical panel...” Neb. Rev. Stat. § 86-516(8). “Governmental entities, state agencies, and noneducation political subdivisions shall submit all projects which use any combination of general funds, federal funds, or cash funds for information technology purposes to the process established by sections 86-512 to 86-524. The commission may adopt policies that establish the format and minimum requirements for project submissions.” Neb. Rev. Stat. § 86-516(5). In order to perform this review, the NITC and DAS Budget Division require agencies/entities to complete this form when requesting funding for technology projects.
2. **WHICH TECHNOLOGY BUDGET REQUESTS REQUIRE A PROJECT PROPOSAL FORM?** See NITC 1-202 available at <http://nitc.ne.gov/standards/>. Attachment A to that document establishes the minimum requirements for project submission.
3. **COMPLETING THE FORM IN THE NEBRASKA BUDGET REQUEST AND REPORTING SYSTEM (NBRRS).** Project proposals should only be submitted by entering the information into the NBRRS. The information requested in this Microsoft Word version of the form should be entered in the NBRRS in the “IT Project Proposal” section. The tabs in the “IT Project Proposal” section coincide with sections contained in this Microsoft Word version of the form. Information may be cut-and-pasted from this form or directly entered into the NBRRS. **ALSO NOTE** that for each “IT Project Proposal” created in the NBRRS, the submitting agency must prepare an “IT Issue” in the NBRRS to request funding for the project.
4. **QUESTIONS.** Contact the Office of the CIO/NITC at (402) 471-7984 or ocio.nitc@nebraska.gov

**Project Proposal Form
2017-2019 Biennial Budget**

General Information

| | |
|--------------------|---|
| Project Title | Radio Transmission Replacement Project |
| Agency (or entity) | NETC (Nebraska Educational Telecommunications Commission) |

Contact Information for this Project:

| | |
|------------------|--|
| Name | Ling Ling Sun |
| Address | 1800 N 33rd |
| City, State, Zip | Lincoln, NE |
| Telephone | 402-472-9333 |
| E-mail Address | lsun@NETnebraska.org |

Executive Summary

Provide a one or two paragraph summary of the proposed project. This summary will be used in other externally distributed documents and should therefore clearly and succinctly describe the project and the information technology required.

NET is requesting an appropriation to replace aging FM antenna and feed line at FM sites KUCV (Lincoln), KTNE (Alliance), KRNE (Merriman), and KXNE (Norfolk). The antennas and feed lines at KTNE and KXNE are 26 years old, KRNE's is 16 years old and KUCV's is 15 years old. Replacing this equipment and older components would be done to reduce rising maintenance costs and to eliminate downtime. Also, the NET FM system is the State of Nebraska's primary relay system for the Emergency Alert System. This is the final phase of updating the statewide NET Radio Network. Delaying the completion of this final phase any further would just continue to increase off-air, downtime at these sites and increase annual operating expenses for repairs, maintenance and supplies. The project would begin the summer of 2017 and proceed through the fall (weather and tower crews permitting) at KUCV and KTNE. Work on the KRNE and KXNE sites would begin summer of 2018 and run thru the fall of 2018. Delaying the work heightens the risk that tower crews will be difficult to schedule and may be more expensive due to anticipated demand related to spectrum repacking adjustments on television towers and a nationwide shortage of tower crews.

Goals, Objectives, and Projected Outcomes (15 Points)

1. Describe the project, including:
 - Specific goals and objectives;
 - Expected beneficiaries of the project; and
 - Expected outcomes.

The goal is to replace 26 year old antennas and feed lines at KTNE-Alliance, KXNE-Norfolk, replace unreliable antennas and feed lines at KUCV-Lincoln, and KRNE- Merriman. The NET Radio listeners, Nebraska commercial broadcasters and Nebraska residents relying on "over the air" Emergency Alerts

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will benefit from this project. The replacement of the FM antennas and feed lines will increase reliability and reduce operating costs.

2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.

The measurement and assessment methods will be monitoring and feedback from NET Radio listeners, Nebraska commercial broadcasters that use NET Radio as their primary EAS monitoring station. The project should positively impact the NET operating budget which by reducing annual maintenance costs.

3. Describe the project's relationship to your agency comprehensive information technology plan.

This project is being done to maximize the reliability and uptime of the radio system NET has the obligation of managing on behalf of the State of Nebraska.

Project Justification / Business Case (25 Points)

4. Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).

NET has a statutory requirement to provide broadcast services as well as distribute emergency notifications across the state of Nebraska. Purchasing and installing new hardware will greatly increase reliability, efficiency and reduce maintenance cost. NET intends to start these projects as soon as possible before tower crews will be difficult to schedule and may be more expensive due to anticipated demand related to spectrum repacking adjustments on television towers and a nationwide shortage of tower crews.

5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

The nature of this project allows few solutions other than replacement of hardware. By doing nothing the broadcast areas will have interruptions in service performance for NET Radio and the State Primary and State Relay of the Nebraska (EAS).

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

This Project is in compliance with the Nebraska Emergency Management Agency's (NEMA) Nebraska EAS Plan, Section 3 stating "The Nebraska EAS State Primary station is KUCV 91.1 FM Lincoln. The NE SP/SR Network is comprised of all Nebraska Educational Telecommunications (NET) radio transmitters, plus KVNO radio in Omaha."

Technical Impact (20 Points)

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7. Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.

The project will replace 26 year technology hardware with new efficient and reliable ones. NET has completed a multi-year project replacing all of the main FM Transmitters, and have documented a substantial reduction in maintenance costs while increasing reliability. The replacement of the FM Antennas and Feed Lines will complete the upgrade to the statewide system, maintain current coverage, reduce repairing cost and increase reliability.

8. Address the following issues with respect to the proposed technology:
- Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.

The replacement will use the most recent industry standard technology and hardware. It should take these systems beyond the next decade.

- Address conformity with applicable NITC technical standards and guidelines (available at <http://nitc.ne.gov/standards/>) and generally accepted industry standards.

The replacement equipment is considered Industry Replacement Standard for this type of system.

- Address the compatibility with existing institutional and/or statewide infrastructure.

These systems are completely compatible with existing power and physical construction of NET's towers and buildings. Any significant upgrades to federally regulated towers will cause the structures to no longer be "grandfathered" under previous tower safety standards. The towers will have to be upgraded to the most current federal tower safety guidelines.

Preliminary Plan for Implementation (10 Points)

9. Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.

NET is planning to purchase, install FM antennas and feed lines. NET is the project sponsor. NET Radio listeners, Nebraska commercial broadcasters that use NET Radio as their Primary EAS monitoring station are the stakeholders.

NET will enter into contract with a qualified insured tower maintenance contractor to install the FM Antennas and Feed Lines.

NET will act as the project manager for this project.

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10. List the major milestones and/or deliverables and provide a timeline for completing each.

The major deliverable for this project is the removal of the old system and replacement of the new system. The time frame for this work is eight (8) days per FM Antenna and Feed Line from receipt of system and getting the tower crew on site. Funds will be requested for KUCV and KTNE being completed in FY2018 and KXNE and KRNE to be completed in 2019.

11. Describe the training and staff development requirements.

No additional training or staff development is required. Operations will be seamless to present day workflow.

12. Describe the ongoing support requirements.

No additional support is required, other than routine operational maintenance.

Risk Assessment (10 Points)

13. Describe possible barriers and risks related to the project and the relative importance of each.

The FM antenna and Feed Lines need to be replaced soon or NET Radio Listeners, Nebraska Commercial Broadcasters and Nebraska residence relaying on "over the air" Emergency Alerts will experience additional downtime and diminished reception. We are expecting a major industry impact caused by the FCC mandated repack, and the availability of qualified manufacturers and installers will be potentially effected for new projects during the next 3-5 years.

14. Identify strategies which have been developed to minimize risks.

This purchase will be made under the State Purchasing Guidelines to minimize risk. Any assistance with contractual parties will have bonded and insurance requirements to assure protection to the State of Nebraska.

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Financial Analysis and Budget (20 Points)

15. Financial Information

The “Financial” information tab in the Nebraska Budget Request and Reporting System (NBRRS) is used to enter the financial information for this project (NOTE: For each IT Project Proposal created in the NBRRS, the submitting agency must prepare an “IT Issue” in the NBRRS to request funding for the project.)



Worksheet in Project
Proposal Form.xls

Nebraska Information Technology Commission
 Project Proposal Form
 Section 8: Financial Analysis and Budget

| | Prior Expended | FY2017 Appr/Reappr | FY2018 Request | FY2019 Request | Future | Total |
|---------------------------|----------------|-----------------------|----------------|----------------|--------|---------------|
| 1. Personnel Costs | | | | | | \$ - |
| 2. Contractual Services | | | | | | |
| 2.1 Design | | | | | | \$ - |
| 2.2 Programming | | | | | | \$ - |
| 2.3 Project Management | | | | | | \$ - |
| 2.4 Other | | | | | | \$ - |
| 3. Supplies and Materials | | | | | | \$ - |
| 4. Telecommunications | | | | | | \$ - |
| 5. Training | | | | | | \$ - |
| 6. Travel | | | | | | \$ - |
| 7. Other Operating Costs | | | | | | \$ - |
| 8. Capital Expenditures | | | | | | |
| 8.1 Hardware | | | \$ 334,000.00 | \$ 334,000.00 | | \$ 668,000.00 |
| 8.2 Software | | | | | | \$ - |
| 8.3 Network | | | | | | \$ - |
| 8.4 Other (Contingency) | | | \$ 16,000.00 | \$ 16,000.00 | | \$ 32,000.00 |
| TOTAL COSTS | \$ - | \$ - | \$ 350,000.00 | \$ 350,000.00 | \$ - | \$ 700,000.00 |
| General Funds | | | | | | \$ - |
| Cash Funds | | | | | | \$ - |
| Federal Funds | | | | | | \$ - |
| Revolving Funds | | | | | | \$ - |
| Other Funds | | | | | | \$ - |
| TOTAL FUNDS | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |